

In the Claims

1. (Currently Amended) A method of fabricating a thin film transistor for a liquid crystal display having a plurality of pixels comprising:

forming an amorphous silicon layer as an active layer on a glass substrate;

forming a gate insulating layer and a gate electrode on the amorphous silicon layer;

doping impurities of a first conductive type in the amorphous silicon layer;

forming a metal layer on exposed portions of the amorphous silicon layer; and

crystallizing the amorphous silicon layer by applying thermal treatment and electric field to the resultant substrate,

wherein the thin film transistor having crystallized amorphous silicon layer is formed at each of the plurality of pixels, and wherein a low off current of about 3.72×10^{-13} A to about 6.5×10^{-11} A is obtained.

2. (Previously Amended 3/20/00)

3. (Previously Amended 3/20/00)

4. (Previously Amended) The method of fabricating a thin film transistor according to claim 1, wherein the gate electrode is formed by at least one transition metal [material including] selected from the group consisting of Mo, Cr and Co.

5. (Previously Amended 3/8/00)

6. (Original)

7. (Previously Amended) The method of fabricating a thin film transistor according to claim 6, wherein the metal layer is formed by at least one transition metal [material including] selected from the group consisting of Cu, Ni, Fe, Co, Ru, Rh, Pd, Os, Ir, Pt, Se, Ti, V, Cr, Mn, Zn, Au and Ag.

8. (Previously Amended 3/8/00)

9. (Original)

10. (Previously Amended) The method of fabricating a thin film transistor according to claim 9, wherein the electrodes are formed by a metal selected from the group consisting of Au, Pt, Fe and Al.

11. (Previously Amended) The method of fabricating a thin film transistor according to claim 9, wherein at least a first electrode and a second electrode are formed prior to the crystallizing step, and crystallization of the amorphous silicon layer occurs faster at the first electrode than at the second electrode.

12. (Previously Amended) The method of fabricating a thin film transistor according to claim 9, wherein at least a negative electrode and a positive electrode are formed prior to the crystallizing step, and crystallization of the amorphous silicon layer occurs faster at the negative electrode than at the positive electrode.

13. (Original)

14. (Currently Amended) A method of fabricating a thin film transistor for a liquid crystal display having a plurality of pixels comprising:

forming a first amorphous silicon layer as an active layer on a glass substrate;

forming a gate insulating layer and a second amorphous silicon layer as a gate electrode on the first amorphous silicon layer;

doping impurities of a first conductive type in the first and second amorphous silicon layers;

forming a metal layer on doped portions of the first and second amorphous silicon layers; and

crystallizing the first and second amorphous silicon layers by performing heat treatment and applying electric field on the resultant substrate,

wherein the thin film transistor having crystallized amorphous silicon layer is formed at each of the plurality of pixels, and wherein a low off current of about 3.72×10^{-13} A to about 6.5×10^{-11} A is obtained.

15. (Original)

16. (Original)

17. (Original)

18. (Original)

19. (Original)

20. (Original)

23. (Previously Amended) The method of fabricating a thin film transistor according to claim 21, wherein at least a first electrode and a second electrode are formed, and crystallization of the amorphous silicon layer occurs faster at the first electrode than at the second electrode.

24. (Original)

25. (Currently Amended) A method of fabricating a thin film transistor for a liquid crystal display having a plurality of pixels comprising:

forming an amorphous silicon layer as an active layer on a glass substrate;

forming a gate insulating layer and a gate electrode on the amorphous silicon layer;

forming a metal layer on exposed portions of the amorphous silicon layer;

doping impurities of a first conductive type in the amorphous silicon layer after the metal layer is formed; and

crystallizing the amorphous silicon layer by applying thermal treatment and an electric field to the resultant substrate,

wherein the thin film transistor having crystallized amorphous silicon layer is formed at

each of the plurality of pixels and wherein a low off current of about 3.72×10^{-13} A to about 6.5×10^{-11} A is obtained.

26. (Previously Amended 3/20/00)

27. (Previously Amended 3/20/00)

28. (Previously Added) The method of fabricating a thin film transistor according to claim 25, wherein the gate electrode is formed by at least one transition metal selected from the group consisting of Mo, Cr and Co.

29. (Previously Added) The method of fabricating a thin film transistor according to claim 25, wherein the impurities include PH_3 .

30. (Previously Added) The method of fabricating a thin film transistor according to claim 25, wherein the metal layer has a thickness of no more than 30\AA .

31. (Previously Added) The method of fabricating a thin film transistor according to claim 30, wherein the metal layer is formed by at least one transition metal selected from the group consisting of Cu, Ni, Fe, Co, Ru, Rh, Pd, Os, Ir, Pt, Se, Ti, V, Cr, Mn, Zn, Au and Ag.

32. (Previously Added) The method of fabricating a thin film transistor according to claim 25, wherein the heat treatment is performed at about 500°C .

33. (Previously Added) The method of fabricating a thin film transistor according to claim 25, further comprising a step of forming electrodes for applying a voltage to form the electric field on the resultant substrate.

34. (Previously Added) The method of fabricating a thin film transistor according to claim 33, wherein the electrodes are formed by a metal selected from the group consisting of Au, Pt, Fe and Al.

35. (Previously Added) The method of fabricating a thin film transistor according to claim 33, wherein at least a first electrode and a second electrode are formed prior to the crystallizing step, and crystallization of the amorphous silicon layer occurs faster at the first electrode than at the second electrode.

36. (Previously Added) The method of fabricating a thin film transistor according to claim 33, wherein at least a negative electrode and a positive electrode are formed prior to the crystallizing step, and crystallization of the amorphous silicon layer occurs faster at the negative electrode than at the positive electrode.

37. (Previously Added) A method of fabricating a thin film transistor for a liquid crystal display having a plurality of pixels comprising:

- forming an amorphous silicon layer as an active layer on a glass substrate;
- forming a gate insulating layer and a gate electrode on the amorphous silicon layer;
- doping impurities of a first conductive type in the amorphous silicon layer;
- forming a metal layer on exposed portions of the amorphous silicon layer; and

crystallizing the amorphous silicon layer by applying thermal treatment and electric field to the resultant substrate,

used wherein the thin film transistor having crystallized amorphous silicon layer is formed at each of the plurality of pixels minimizing metallic contamination in the channel region during crystallization and wherein a low off current of about 3.72×10^{-13} A to about 6.5×10^{-11} A is obtained.
